



Docket No.: M4065.0067/P067  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

---

In re Patent Application of:  
Warren M. Farnworth

Application No.: 09/118,080

Art Unit: 2814

Filed: July 17, 1998 (RCE)

Examiner: A. Chambliss

For: LEAD OVER CHIP SEMICONDUCTOR  
DEVICES WITH A BALL GRID ARRAY

**REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is being filed pursuant to 37 C.F.R. § 41.41. A Request for Oral Hearing, pursuant to § 41.47, is being filed concurrently herewith. Please consider the following:

First, the Examiner's Answer, dated September 3, 2004, suggests that the Appellant's Brief, filed June 21, 2004, somehow does not contain a proper statement with respect to related appeals and interferences. Please note, however, that the Appellant's

Brief, page 2, does indeed contain a proper statement under 37 C.F.R. § 1.192(c)(2), as effective prior to September 13, 2004. The Appellant's Brief is believed to be in proper form.

Second, the Examiner's Answer overstates the disclosure of Heo and the Master Bond document. Contrary to the Examiner's Answer, page 4, the two documents do not disclose "substantially the same environment of an adhesive utilized in structural bonding applications." Heo refers to an adhesive 30 (Fig. 4B) that is located between a semiconductor chip 11 and a non-conductive film 21. The film 21 is said to be made of polymer tape or polyimide (column 5, lines 11-12). The Master Bond document, on the other hand, refers to a material for use in "high performance structural bonding applications," with "exceptionally high tensile shear and peel strength." The Master Bond material is said to provide "resistance to many chemicals, including water, oils and fuels," and is said to be applicable to a "wide variety of substrates including many metals, plastics, rubbers, ceramics, and glass."

Third, contrary to the Examiner's Answer, page 4, the references nowhere suggest that "the ultimate good in semiconductor design is to have stability when attaching components (i.e. tape and integrated circuit)." The Examiner engages in improper hindsight reasoning where he argues, on page 4 of the Examiner's Answer, that a reason for using the Master Bond adhesive in place of the Heo adhesive 30 would have been to "avoid" "misalignment between the tape and integrated circuit." There is nothing in the references to suggest that adhesive-related misalignment between the Heo multi-layer film 20 and the chip 11 was a problem, nor is there anything in the references to

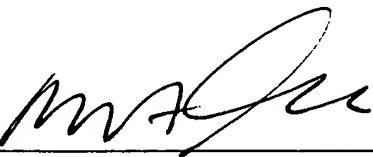
suggest that the Master Bond adhesive would have been a useful solution to any such problem.

Finally, contrary to the Examiner's Answer, page 5, there is nothing in the references to suggest that it would have been useful to provide an insulator material in the location of the Heo adhesive 30. Heo says that the film 21 (Fig. 4B) is non-conductive. There is nothing in the reference to suggest that it would have been useful to have an insulator material next to the non-conductive film 21. This aspect of the Examiner's argument is nothing but improper hindsight justification. The real reason the Examiner relies on the Master Bond document is because it mentions low temperature curing, and because *Appellant's specification* teaches that it is advantageous to use a low temperature curing adhesive in the claimed combination.

The rejections of claims 1-7, 10-18 and 31-33 should be reversed, for the reasons given in the Appellant's Brief, and for the additional reasons set forth herein.

Dated: October 27, 2004

Respectfully submitted,

By 

Mark J. Thronson

Registration No. 33,082

DICKSTEIN SHAPIRO MORIN &  
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 775-4742

Attorneys for Applicant